

MONTHLY WEATHER REVIEW,

SEPTEMBER, 1876.

WAR DEPARTMENT,

Office of the Chief Signal Officer,

DIVISION OF

TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE.

The present REVIEW is based on the meteorological data collected in the office of the Chief Signal Officer of the Army. Especially have the regular tri-daily charts been consulted, and the monthly journals and reports from four hundred and eighteen stations, classified as Voluntary Observers, Army Posts and Signal Service stations. The more prominent features in the meteorology of the month have been, first—the general prevalence of low pressures and low temperatures east of the Rocky Mountains; second, the unusual rain-fall of the Atlantic States; third, the destructive hurricane of the 16th and 17th.

BAROMETRIC PRESSURE.

In General.—The general distribution of barometric pressure is shown by the isobars upon chart No. II, from which it will be seen that the average pressure is very uniform over the greater part of the region covered by the observations. In September, 1873, the isobar of 30.00 passed from Kansas to Lakes Erie and Ontario, and thence to the Gulf of St. Lawrence, the pressure being higher on the south and east sides. In September, 1874, the same isobar lay decidedly north of the Lower Lakes and the St. Lawrence, but curved southward through the Mississippi valley to the Gulf of Mexico. In September, 1875, its position lay to the south of the Lower Lakes and the St. Lawrence, and in the present month it is still further south and is almost entirely confined to the Gulf States, while the greater part of our territory shows an average pressure from 0.05 to 0.15 lower than in previous years. Perhaps the most remarkable features in this respect are the high pressure in and north of Minnesota and the low pressure off the Middle Atlantic States, which conditions, if they continue, may herald an early and cold winter. As compared with the isobars of August, 1876, lower pressures are noted in Oregon and throughout the Atlantic States, but decidedly higher pressures in Minnesota and Dakota, showing that the change from the summer to the winter distribution of the atmosphere is already well under way.

Areas of High Barometer.—These areas have, during the past September, been marked at each successive recurrence by a steady increase in the temperature depression, in the area and volume of cool air, and in the distance to which they have penetrated southward before being dissipated by solar heat and increasing moisture. Thus, in the early part of the month, none of these were able to produce severe northerly winds on the Gulf coast, while the last one exhibited a somewhat unexpected power in this respect, as shown by the "northers" of September 29th and 30th.

No. I.—This is recorded as No. VII in the Review for August. The course of the central area of highest pressure is very approximately given by its successive positions at 7:35 a. m., and was as follows: On the 1st, central in Dakota, the minimum temperature reported that morning from this region being 41°; on the 2nd, central in Iowa, with a minimum of 35°; 3rd, in Tennessee, minimum 56°, after which it disappeared over the Eastern Gulf and South Atlantic States.

No. II.—Followed in the rear of low pressure No. II, and it was central on the successive mornings as follows: On the 4th, in Manitoba, minimum temperature 37°; 5th, Lakes Superior and Huron, minimum 39°; 6th, Maryland, minimum 43°, after which it flowed southward along the Carolina coasts.

No. III.—Followed in the rear of low barometer No. IV. It was, on the morning of the 7th, central in or north of Manitoba, the minimum temperature reported being 44°; on the 8th, east of Manitoba, minimum 35°; 9th, north of Lake Superior, minimum 44°; 10th, north of Lake Superior, and the minimum 49°. By this time, also, a portion of the air had extended southward to the Texas coast, where the maximum wind was N. 14 miles; 11th, central north of Wisconsin, with extensions to Texas and New England, and a minimum of 37°, and highest wind on Texas coast N. 20 miles; 12th, north of Lake Superior, minimum 35°; 13th, north of Lakes Huron and Erie, minimum 38°.

No. IV.—Followed in the rear of low pressure No. VI. Central on the morning of the 14th in Manitoba, minimum 35°; 15th, in Missouri, minimum 45°, and maximum wind on the Texas coast NE. 24 miles;